Region 1 FY 2012 Invasive Species Control Program Proposal

Refuge/complex name: **Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge**

Project title: **Highway 24 – Homestead Reclamation Project**

Project description:

Target Invasive Species:	Kochia (*Bassia scoparia*; Class B noxious weed in WA), Smotherweed (*Bassia hyssopifolia*), Tumblemustard (*Sisymbrium altissimum*), Russian thistle (*Salsola tragus*, *S. kali*)
Infested Acres:	~360 acres
Treatment Acres:	156 acres
Utilized IPM Measures:	Mechanical (Mowing) [1] Mechanical (Prescribed Fire) [1] Chemical (Ground Broadcast) [2] Cultural (Competition Seeding) Prevention (Spot Treatment, Equipment/Access BMP's)

[1] *to be covered under matching funds*
[2] *to be partially covered under matching funds*

The Highway 24 – Homestead project is a multi-year site reclamation effort designed to address a habitat degradation and hazardous fuel issue primarily caused by leaching irrigation water. This increased out-of-season moisture has significantly altered the hydrology and soil chemistry of the project area, allowing kochia and other invasive broadleaf weeds (including smotherweed, tumble mustard, and two species of Russian thistle) to invade and outcompete the stressed native shrub-steppe habitats. In particular, spiny hopsage (*Grayia spinosa*), and its associated subshrubs, forbs, and short grasses have all begun to die out. Since the irrigation is both administratively and legislatively protected, the only viable option is to treat the invasive components and introduce native species better suited to the modified site conditions. The multi-year prescription that has been developed for this site involves mowing existing standing weeds and detritus, burning the area, chemically treating the invasive components using a rotational, multiple mode-of-action series of herbicide applications, and then progressively seeding in selected native grasses, forbs, sub-shrubs, and shrubs. Monitoring and spot treatment of other invasives as necessary will also be conducted. Weed transport prevention protocols are in place across the Mid-Columbia River NWR Complex, which will limit potential introduction of other invasive species into the project area. A total of approximately 156 acres within 360 infested acres are currently targeted for direct treatment and are the most heavily infested and altered areas. The remaining 204 acres have invasives present but the native components are sufficiently intact that it is believed that if the main neighboring infestation pressure is removed the native ecosystems should be able to recover on their own. Additionally, these remaining acres are of marginal value for the targeted invasive species, so by removing the main seed source and introducing an alternate native community in its place these acres should shift to a native-driven ecosystem in time (*i.e.*, the project area represents a plant version of sink-source population dynamics).

What is potential for eradication of the invasive species?
The project goal is to completely remove the invasive broadleaf component from the project area, exhaust its seed bank through attrition, and to install a functioning native ecosystem better suited to the altered site characteristics. Elimination of the primary target species from the project area is possible by the end of the multi-year effort.

Comment [BFW1]: DOE is interesting in partnering with monitoring and analysis & very interesting in learning about the restoration techniques FWS is using and applying it to Central Hanford. Some lands in Central Hanford could potentially be transferred to the Service in the future.

Comment [BFW2]: The ISCP proposal format we received did not include a budget section so we were unsure how much information you wanted. The attached Excel workbook gives a partial cost breakdown for the two projects, with worksheets splitting the two projects. This workbook highlights the anticipated costs to be covered under the ISCP award. Costs are based on real-world estimates from past projects and/or from contractors. The cells include the calculation formulas and standard multipliers (e.g., contracting costs) so highlighting individual cells will give you an idea of where information comes from and/or how it's calculated.

I had already cut over $60,000 from the Homestead project *before* submitting the proposal by reducing the scope of the project. Additionally this project already includes $54,000 in matching funds from the Hazardous Fuels Reduction program (for mowing, burning, and partial coverage of chemical treatment), as well as an as-yet unspecified amount from Station funds (see above as to why it is as yet unspecified). Not included in the funding request (i.e., those costs already intended to be covered under Station funds) are: the equipment mob/demob costs, fuel costs, equipment repair costs, seed application costs, spot treatment costs, monitoring costs, and potentially follow-up (Year 2+) treatment costs if supplemental funds cannot be found. If we limit this year's chemical treatment costs to two treatments (through application timing) then we can shave the costs down to $38,900. The original $40,000 request was ball-parked in case a third application is/was necessary.

The two project areas are decidedly different from one another. The Snively Basin project is within the Arid Lands Ecology Reserve, Rattlesnake Unit, of the Monument. It is a mi ...

Comment [BFW3]: 1) Are both projects contingent on additional funding that you'll need to apply for again next year from ISCP? Will they be a failure if you are not awarded funding in FY2013?
You did indeed speak with Heidi about the Hwy 24 Homestead project. The Hwy 24 Homestead project will likely require additional funding in Years 2 and 3 beyond base funding, though at a significantly lower level than is required this year (calculated total for 2013: $18,048, for 2014: $15,647; however these totals also include some costs that would come under base funding, such as salaries for extant employees). Whether this would be through a grant/appropriation/what have you, such as ...

Comment [BFW4]: Certainly an interesting theory. It will be interesting to hear how this pans out.

Does the project support achieving the refuge purpose?
One of the primary purposes of the Hanford Reach National Monument (Monument) as stated in Presidential Proclamation 7319 ("Establishment of the Hanford Reach National Monument") and in the Final Comprehensive Conservation Plan is to protect and restore shrub-steppe ecosystems. While restoration to pre-disturbance condition is not possible given the source of the site degradation (offsite irrigation and administratively and legislatively-protected irrigation canals), reclamation to an alternate native condition is possible with sufficient input. The kochia, et al., are non-native invasives and cause severe degradation of shrub-steppe ecosystems. Eradication of these invasive broadleaves and establishment of self-functioning native ecosystems supports the primary purpose of the Monument.

Does the project support biological integrity?
By eliminating the invasive components from the project area and introducing native species (all of which are found elsewhere on the Monument) that are better suited to the altered site conditions caused by the leaching (subsurface) water, a native ecosystem can be established and neighboring communities will be better able to withstand invasive pressures. The project will also remove a potential wildfire ignition site adjacent to a highway and to some of the best quality shrub steppe habitat remaining on the Monument.

Will the project involve support from partners?
This project has been rated as a top priority within both the Project Prioritization and the Hazardous Fuels Prioritization and Allocation Systems. The mowing, prescribed burn and a portion of the chemical treatments are to be covered by funds allocated by the Region 1 fire program using these systems. ISCP funds are required to fully cover the chemical applications, as well as to implement the cultural controls (competition seeding) identified in the reclamation prescription. Hanford Fire, various county fire districts from Grant, Adams, and Franklin Counties, and the Washington Department of Transportation will likely be involved in the prescribed burn. Friends of the Mid-Columbia River Refuges, as well as other Refuge volunteers, will be involved with the monitoring.

What monitoring will be used to evaluate the project?
The project area has been mapped with a GPS unit and then stratified in GIS. All treatments will be GPS'ed and tracked within GIS. Sampling transects will be established in the stratified areas to monitor frequency and cover percentages. Six photopoints have been established within the treatment area, and additional photopoints will be established within and adjacent to the overall project area to fully monitor site conditions over time.

Budget: Total – $40,000 (*to chemically treat invasive broadleaves, monitor and spot treat other invasives as necessary, and purchase and apply native grass seed*)

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